Technical skills: expectations of NWU information technology graduates upon entering the Agile workplace

ITRI671 – Research project

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Introduction

- Goal: Investigate the technical skills that IT graduates are expected to have upon entering the workplace.
- Explores perspectives of recent graduates.
- Outcome: Identified potential gaps in technical skills acquired compared to skills expectations of first job.
- Skills expectations modelled after Agile software development approach.

Key concepts

- Key concept: Technical skills expectations of graduates working within the Agile software development approach.

- Second key concept: Technical skills IT graduates acquired during their studies.

Research problem

- The need for professionals with IT skills have become crucial in all organisations.
- There is a dire shortage of these skills in South Africa (De Villiers *et al.* 2012).
- Quantity vs Level of capability.
- Exploring skills expectations and graduates' perspectives

Objectives

- Primary objective:
  - The primary objective is to investigate the perspectives of IT graduates toward their readiness for industry.
  - Limited to graduates working within the Agile software development approach.

Objectives *(cont.)*

- Secondary objectives:
  - Theoretical objectives – a literature review is required for:
    - The Agile software development approach.
    - The skills expectations of industry from recent graduates upon entering the workplace.
    - The research paradigm and method of this study.
  - Empirical objective:
    - Explore the perspectives of IT graduates toward their readiness for industry.
    - Interpretive research paradigm
    - Content analysis

Research paradigm and method

- An interpretive research paradigm is used.
- Explore perspectives of graduates.
- Understand experiences of individuals.
- Qualitative data, semi-structured interviews.

Data collection and analysis

- Data collection:
  - Semi-structured interviews
- Data analysis:
  - Interpretive content analysis

Ethical considerations

- Voluntary
- Informed consent
- Anonymity
- Confidentiality
- NWU ethical process

Participants

- Graduates of a BSc IT degree
- Currently employed within an Agile environment
- Graduated within the last 2 years

Data collection

- Semi-structured interviews
- Face-to-face
- Consent form
- Audio-recordings

Data analysis

- Content analysis:

1. Decontextualization:
   - Shortening transcribed text
   - Identify meaning units
   - Assign a code

2. Recontextualization:
   - Re-examine content
   - Compare meaning units with original text
   - Irrelevant content

Data analysis (cont.)

- Content analysis:

3. Categorization:
   - Condensed meaning units
   - Identify categories
   - Re-examine codes

4. Compilation:
   - Summary of categories, codes, occurrences.
   - Participants words
   - Retain original meaning

Findings

- Technical skills:
  - Inadequate proficiency in programming (structure, implementation)
  - Inadequate proficiency in web development
  - Adequate proficiency in Database related skills
  - Adequate foundation of skills

- Most useful skills acquired:
  - Programming
  - Databases
  - Web development: Architectural pattern (MVC)

Limitations and future research

- Limitations:
  - Participants
  - Interviews
  - Industry expectations

- Future research:
  - Expand research parameter
  - Additional objectives (industry survey regarding expectations)

Thank you!